

REMARKS

The following paragraphs correspond to the order of the paragraphs of the Office Action:

1. The disclosure is now corrected by including a Brief Description of the Drawing on page 12 between lines 3 and 4.
2. The claims are now amended so as to cancel the terms "possibly" and "such as". It is also seen that claim 1 is amended by including an alternative description of the binder as being 5-25 parts by weight of a zeolitized binder per hundred parts of fixed aggregate, support being found on page 7, lines 3-5.
3. With respect to the claim rejections under 35 U.S.C. 112, it is seen that the expressions "possibly" and "such as " are now removed from the claims. It is also seen that an alternative binder in an alternative amount is incorporated into claim 1 so as to provide antecedent support for the zeolitized binder in claims 3 and 4. It is further seen that new claims 10-17 are added, with claim 10 being directed to the use of the zeolitized clay as a binder and claim 17 being directed to a binder which is inert to adsorption. Claims 11 and 12 divide claim 1 into the two different types of aggregates - type A which is essentially a two component mixture of LSX and binder and type B which is directed to a three component mixture of X, LSX and binder. Claims 13-15 are directed to the preferred percentages set forth in original claim 1, for example claim 14 requiring at least 98% of the exchangeable sites in both zeolites X and LSX to be occupied by sodium ions. Claim 16 is directed to the importance of a small crystal size as emphasized in the discussion of Table 4 on page 16. Support for a crystal size of less than 4 microns is found on page 6, line 13.

Rejections Under 35 U.S.C. § 102 and § 103

Original claim 1 did not contain antecedent basis for claims 3 and 4. Conversely, that original claim is now intended to be replaced by dependent claim 17 which is not shown to be anticipated by the prior art since claim 17 requires that the binder is inert to adsorption. If the Examiner finds this claim to be patentable, Applicants agree to rewriting the claim in independent form, and omitting the subject matter from claim 1. It is also seen that claim 1 is

amended in the third line from the bottom by indicating that the carbon dioxide, hydrocarbons and/or nitrogen oxides are adsorbed on the adsorbent of the invention and no other.

With respect to the references, Applicants' French representative has supplied a detailed explanation of same and how the present invention is distinguished thereover, as follows:

35 U.S.C. § 102 Rejection

U.S. 2003/126989 (Bancon et al.) discloses the use of LSX type zeolites for adsorption of CO₂ only. Other adsorbents are needed for removing other impurities (see for example column 2, [0030] and [0031]). The present invention is therefore novel over U.S. 2003/126989, since the claimed method involves the same adsorbent for both CO₂ and the other impurities.

35 U.S.C. § 103 Claim Rejection

U.S. 6,616,732 (Grandmougin et al.) discloses a method for purifying a gas stream containing CO₂. The claimed invention differs from this piece of prior art in that besides CO₂, hydrocarbons or nitrogen oxides, and possibly water, are removed by the adsorbent. The present invention therefore makes it possible to remove CO₂ in the presence of other impurities. Further, and as taught U.S. 2003/126989, U.S. 6,616,732 specifically teaches that if adsorbent beds capable of adsorbing said contaminants (see column 4, line 63 - column 5, line 2).

Therefore, both U.S. 2003/126989 and U.S. 6,616,732 teach that when impurities other than CO₂ are present, other types of adsorbents are required. The combined teaching of these pieces of prior art teaches away from the present invention, where one type adsorbent is efficient for removing CO₂ and other impurities chosen from among hydrocarbons, nitrogen oxides and possibly water.

U.S. 6,264,881 (Plée) teaches that "binderless" zeolites possess better adsorption properties. However, there is no suggestion in this prior art to obviously lead the skilled in the art to replace the adsorbent by Bancon et al. with the one taught by Plée. Again Bancon et al. does not disclose the adsorption of other impurities than CO₂ and Plée does not describe nor suggest any adsorption of CO₂. Only toluene adsorption is exemplified by Plée, said toluene adsorption being the reference for testing adsorption capacity and efficiency of zeolites. There is

no obvious reason to use the adsorbent by Plée in the process by Bancon with the expectation to arrive at the process of the present invention.

In view of the above amendments to the claims and the above remarks, favorable reconsideration is respectfully requested. If the Examiner is of the opinion that there is patentable subject matter which is not claimed particularly, Counsel would appreciate receiving any information to this effect so that the patentable subject matter can be placed in condition for allowance. For this purpose, the Examiner is invited to telephone Counsel at the number indicated below, or in Counsel's absence, Ms. Richardson at 703-812-5326, and she will be pleased to involve the services of another attorney.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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